

# **A Broader Education for Special Forces Officers**

**A Monograph  
by  
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## **Abstract**

A BROADER EDUCATION FOR SPECIAL FORCES OFFICERS by CW4 Andre' Nelson, USA, 45 pages.

The purpose of this monograph is to examine whether the measures of effectiveness used in Special Forces officer education venues are sufficient to address the operational requirements over a career in a holistic manner. Past education evaluations approach measurements in an isolated manner and are limited temporally. The educational experiences of the officer over a career have many lasting aspects that should be evaluated in context if approached in a holistic fashion and, in great part, should be in the same lines as operational requirements. In order to recognize these aspects in relation to the changing nature of requirements, an education base that is even broader than what is provided today may provide additional avenues of approach to both the requirements and relevant measures of evaluation. Consequently, since it is unrealistic to expect students to be any better than their educators, education professionals need to be grown from within the Special Forces community to serve as 'educational artists' linking the strategic education requirements of the future with the tactical implementation of Special Forces officers.

The methodology of this paper is to examine the context of Special Forces officer education through its brief history and consider how its effectiveness is managed. Typical measures of effectiveness are considered demonstrating common limitations use. This examination is relevant due to the nature of current and near-term threats which may involve continually changing conflicts that actually exceed the time period of an officer's career. Broadening Special Forces officer education to include greater exposure to more disciplines would create better cognitive freedom for plans and operations. Similarly, measures of effectiveness that are structured to tie aspects of events back to educational experiences in the context of the officer's career can better provide the insight necessary to keep Special Forces education relevant, effective, and efficient.

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## **Introduction**

Effective training and education are more important than ever today. Demands on military leaders today are changing at a high rate. Correspondingly, Special Forces officers are required to lead in a wide variety of situations that are likely to become even more varied in the future. Individual measures of effectiveness used to assess Special Forces officer training are often isolated from the whole of the officer's career limiting the ability to adjust educational requirements. Thus future Special Forces officers, and the organizations that educate them, will require a broader knowledge base to determine the impact and effectiveness of learning events and identify opportunities to better adapt.

The expansion of available information has made it more difficult to sift through what is important and what is not. For organizations that train and educate Special Forces officers, determining the correct depth and breadth of information is an ongoing challenge. The costs of education in private universities are increasing at a sustained high rate and the U.S. Government is, and should be, always looking for ways to make training and education cost-effective. This paper considers measures of effectiveness relating to different aspects of education that have relevance to Special Forces officer education. It looks at efforts across a wide arena of U.S. educational efforts and studies since the late 1980s noting some emphasis changes in key areas and pays special attention to the complex interrelations of education effectiveness and measures used to assist in the illumination of understanding. Key among these is the concept that learning is lifelong and thus cannot be measured only in isolated events. Consideration of what constitutes educational success at different levels of authority such as Congress, U.S. Government-level education programs, military, and Special Forces are used to highlight the interrelated aspects and difficulty in measuring educational effectiveness. Additionally, in order to illustrate specific concepts, non-officer education venues are included such as Non-Commissioned Officer (NCO) training studies and government programs that influence public education. The paper then considers the issues of determining the relationship between operational requirements and educational goals, current and recent measures used, and successes and limitations of these approaches. Lastly, an

analysis of some of the underlying factors and potential areas for change and recommendations for areas of further research are presented including the relatively new application of neuropsychology to education.

There have been key contributions in the study and application of educational effectiveness since the mid-1980s that have a bearing on the Special Forces officer. There are a number of studies such as the Review of Education and Training for Officers that have been pertinent to military education.<sup>1</sup> While some of this education highlights issues that impact the military as whole, major differences such as requirements of Special Operations Forces and the compressed utilization time available for most Special Forces soldiers are not addressed in general military education literature. Special Operations – specific literature emerged to a greater extent in the mid-1990s when the United States Assistant Secretary for Defense, Special Operations and Low Intensity Conflict published *Special Operations and Low Intensity Conflict in Department of Defense Professional Military Education*.<sup>2</sup> During this time period the review and efficacy of Army Special Operations courses was inherently brought under the umbrella of the United States Special Operations Command (USSOCOM), which had been formed just years earlier in 1989. Many of these reviews were able to identify redundancies in training and related administrative processes.<sup>3</sup> The stakeholders of Special Forces education are wide-ranging and include the Defense Subcommittees of Congress, the Assistant Secretary of Defense, Special Operations and Low Intensity Conflict, the commanding headquarters of USSOCOM and U.S. Army Special Operations Command (USASOC), and the educational offices of the U.S. Army Training and Doctrine Command, Joint Special

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<sup>1</sup> In 1977, the Chief of Staff of the Army directed a Review of Education and Training for Officers was conducted and prepared by A Study Group for the Review of Education and Training for Officers DACS – OTRG, Headquarters, Department of the Army in 1978. This study considered what factors might require changing the Army Officer Education and Training System. It looked at educational components of all services and made recommendations predominately at the Army-wide level. Issues unique to Special Forces were not addressed beyond allocation of professional specialties and Army-wide Professional Education requirements.

<sup>2</sup> United States. Assistant Secretary for Defense, Special Operations and Low Intensity Conflict. *Special Operations and Low Intensity Conflict in Department of Defense Professional Military Education* (Washington, DC: Department of Defense, 1994).

<sup>3</sup> Office of the Inspector General, *U.S. Special Operations Command Training and Education Program*, Report No. 97-012 (Washington D.C.: October 30, 1996).

Operations University, and the John F. Kennedy Special Warfare Center and School. In the years since 9/11, the importance of civilian education has again received greater attention within the Special Operations Community due to an increase in demand as USSOCOM took the lead in the War on Terror in 2005.<sup>4</sup> Periodic service-wide guidance documents such as the 2009 Army Leadership Development Strategy by the Army G3/5/7 looks at dealing with increasing complexity in military requirements and the need for greater critical thinking. The Subcommittee on Oversight and Investigations to the Committee on Armed Services found in 2009 that “The intellectual development of officers, especially in critical thinking skills, is facilitated by assignment to civilian graduate education programs at top-tier universities relatively early in their careers.”<sup>5</sup> This report also emphasized effective, continuous, leadership development through effective developmental efforts as one of the top priorities of the military.

In considering the effectiveness of military education, there have been many contributors in the civilian public education sector. In *Thinking in Time*, Richard Neustadt and Ernest May considered the use of history in education and development. Their most significant concept, called placement, is the enrichment of stereotypes regarding another’s outlook using historical information. Placement provides individuals hypotheses regarding the way that others might view a new set of issues, what is important, and what analysis they might like or reject. This concept was proposed to be useful as a perspective reference. Neustadt and May also consider measuring the impact of teaching a concept and its perception of benefit relative to other concepts measured from the student perspective. The value of concepts as viewed by the student may be a starting place that is easier to understand than using traditional measurements and statistics alone. With this in mind, Neustadt and May noted that the concept of placing

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<sup>4</sup> The 2004 *Unified Command Plan*, is classified. See United States Special Operations Command. *United States Special Operations Command History* (Tampa, FL: Headquarters USSOCOM, 2007), 16. [http://www.fas.org/blog/secrecy/2007/04/special\\_operations\\_command\\_a\\_t.html](http://www.fas.org/blog/secrecy/2007/04/special_operations_command_a_t.html)

<sup>5</sup> U.S. House of Representatives, *Another Crossroads? Professional Military Education Two Decades After the Goldwater-Nichols Act and the Skelton Panel*, Subcommittee on Oversight and Investigations to the Committee on Armed Services (Washington D.C.: April 2010), 46.



organizations scored higher in utility among the alumni of their *Kennedy School Uses of History* course than all other concepts.<sup>6</sup>

Alexander L. George looked closely at determining how to translate academic theory into policy practice effectively. An expanded knowledge base may better allow integration of learning into useful practice. However, George asserts that since academia and high-level government have different conceptions of international relations, efforts must first be taken to improve communications between these communities in order to put an expanded knowledge base to use.<sup>7</sup>

In the 1990s, Larry Condelli and Vince Padilla tried to identify common broad measures for the National Reporting System for Adult Education, noting the tradeoff in high-fidelity post-education event collection efforts with their associated costs. That is broad survey methodologies have the advantage of a large universe to gain a significant sample size and may be conducted at a lower cost. However, this approach limited disaggregation to constituent programs. Conversely, capturing high amounts of data at lower level programs had better fidelity and provided a more useful and flexible data set. This data capture methodology came, however, with higher associated costs in personnel and still required central oversight.<sup>8</sup> This study highlights a few of the general problems with data capture for long-term measures of effectiveness where the students are no longer under the control or influence of the educational institution.

Over the past thirty years the Army has periodically turned to the RAND Corporation to conduct studies related to military education. These studies were focused on relatively broad initiatives in which certain aspects of measures of effectiveness were important. One such endeavor was the U.S. Army's efforts to create a Total Army School System that better integrated the reserve components and active

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<sup>6</sup> Richard Elliott Neustadt and Ernest R. May, *Thinking in Time (the Uses of History for Decision Makers)* (New York: Macmillan USA, 1986), 281.

<sup>7</sup> Alexander L. George, *Bridging the Gap* (Washington D.C.: United States Institute of Peace Press, 1993), 135.

<sup>8</sup> Larry Condelli and Vince Padilla, *Report of the Pilot Test for the National Reporting System for Adult Education* (Washington: American Institutes for Research, 1999), 3-15.

component training. In the study, *Leader Development in Army Units: Views from the Field*, RAND researchers determined that while the Army does indeed promote lifelong learning throughout their careers, in many cases, programs focus on the Individual far more than the organizations that the individual is associated with after training. RAND also noted that measuring and controlling the quality of leader development was difficult, and that wide variations in results were the result. The survey-based techniques, for one, did not make it easy to determine what tools were effective in the mind of the survey respondent. The study noted that looking at the quality of leadership development activities in addition to the type was likely a way to improve the quality of the study. Other studies also note the sequential and developmental nature of professional leader development. Distinctions and interactions of schools and assignments were also among the key findings, wherein the variety of assignments provides significant contributions to the development of officers and leads to further development by placing more experienced NCOs with less experienced officers.<sup>9</sup> This further contributes the argument for expanded knowledge breadth in the officer population.

The Army Research Institute (ARI) has also contributed research associated with Army and Special Forces training and education programs. Again, these studies have generally been directed and focused on key elements of training and education in response to concerns raised by the sponsoring organization. Recent key studies include those focused on critical thinking and adaptive leadership. Many of these studies demonstrate the insufficiency of measures of effectiveness relative to the environment that these officers are expected to perform in. When looking at the education of critical thinking for leaders, for example, only a small portion of the methods that were used to promote critical thinking are validated methods. Some had no report of quantitative or qualitative measures of performance after the training occurred. This contributed to the conclusion, in this case, that “If empirical evidence is applied as a standard, we must conclude that current research lacks information about the

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<sup>9</sup> Peter Schirmer, James C. Crowley, Nancy E. Blacker, Richard R. Brennan, Jr., Henry A. Leonard, J. Michael Polich, Jerry M. Sollinger, Danielle M. Varda, *Leader Development in Army Units: Views from the Field*, (Arlington, VA: Arroyo Center, Rand Corporation, 1999), 58-59.

effectiveness of CT [critical thinking] teaching methods.”<sup>10</sup> As for their own measures, ARI and RAND both use a lot of form and survey-based assessment tools targeted at individuals both for classroom environments and at assignments. Typical methods of evaluation are then statistically based analysis such as a one-way repeated measure Analysis of Variance (ANOVA), one-sample *t* tests, etc.<sup>11</sup> Also of note, a unique relationship has been established between ARI and the United States Army John F. Kennedy Special Warfare Center and School. The efforts to foster this relationship demonstrates the commitment to learning resulting in dedicated researchers such as Dr. Michelle Wisecarver and Kip Mendini conducting localized studies targeting curriculum and methodology.

One outcome desired by military leaders today is to make learning a continuous process. LTG James D. Thurman confirmed in his 2009 cover letter for the Army 3/5/7's *Leadership Development Strategy for a 21<sup>st</sup> Century Army* the idea that learning is accomplished through education, training, and experiences.<sup>12</sup> The theme of lifelong learning is not unique to the military and is nearly universal among education professionals. Arthur Cropley, Professor of Educational Psychology at the University of Hamburg, notes that lifelong learning would:

1. last the whole life of each individual;
2. lead to the systematic acquisition, renewal, upgrading and completion [sic] of knowledge, skills and attitudes as became necessary in response to the constantly changing conditions of modern life, with the ultimate goal of promoting the self-fulfillment of each individual;
3. be dependent for its successful implementation on people's increasing ability and motivation to engage in self-directed learning activities;
4. acknowledge the contribution of all available educational influences including formal, non-formal and informal.<sup>13</sup>

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<sup>10</sup> Susan C. Fischer., and Alan V. Spiker, Sharon L. Reidel, *Critical Thinking Training for Army Officers Volume Three: Development and Assessment of a Web-based Training Program* (Arlington, VA: U.S. Army Research Institute for the Behavioral and Social Sciences, 2009), 7.

<sup>11</sup> Analysis of Variance is a group of statistical models that are used to attribute components of variation to different sources. One-sample *t*-test is a statistical procedure used to determine the difference in the mean of a population sample and the known population mean.

<sup>12</sup> LTG James D. Thurman, “Army Leadership Development Strategy”, in a cover memorandum for *A Leadership Development Strategy for a 21<sup>st</sup> Century Army* (Washington D.C., U.S. Army G3/5/7, 2009), 1.

<sup>13</sup> Arthur Cropley, “Lifelong Learning and Systems of Education: an Overview”, in A Cropley, ed. *Towards a System of Lifelong Education: Some Practical Considerations*, (Oxford: Pergamon Press, 1980), 1-15.

Cropley's work contributes the idea that successful individuals that are able to adapt to changes need to have an attitude that learning is a motivating part of their self-image. Likewise, professional and educational organizations need to realize their part in fostering this concept within their students and employees. With the possible exception of a completion of knowledge being an oxymoron in lifelong learning, these four aspects are not inconsistent with goals of the military, the Army, or Special Operations Forces.

Within the realm of the education of public servants, including Army officers, the United States Congress holds the military responsible for many of the aspects that go into education and professional development in general. Since the implementation of the comprehensive review conducted by the Skelton Panel in 1989, Congress has periodically looked at aspects of the effectiveness and professionalism of the officer corps and how it is managed, culminating with another comprehensive review in April of 2010.<sup>14</sup> In their budgetary oversight role, Congress looks at the effectiveness of many aspects of learning that are designed to ensure that educational programs prepare DOD personnel to perform their wartime missions. The ability to perform the mission is the ultimate goal that drives measures of effectiveness, and this ability is often measured in time, manpower, and money. Congress may issue directives mandating, in some cases, that changes be made to correct a perceived problem such as adherence to specifications. In these cases, other measurements such as numbers of participants, population ratios, and surveys, are used in aggregate reports submitted to Congress that represent progress toward a desired endstate. One event that is frequently looked at for effectiveness is the implementation of the Goldwater-Nichols Act. This action was designed to force services to work together after a

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<sup>14</sup> The following are some of the reports provided to Congress since the 1989 Skelton Panel review: Robert L. Goldich, "The DOD Service Academies: Issues for Congress," *Congressional Research Service Report for Congress* (Washington, D.C., Congressional Research Service, 1997); Katherine Lemay Brown, "Department of Defense Reorganization Act of 1986: Proposals for Reforming the Joint Officer Personnel Management Program," *Congressional Research Service Report for Congress* (Washington, D.C., Congressional Research Service, 18 July 2000); Charles A. Henning, *Army Officer Shortages: Background and Issues for Congress* (Washington DC, Congressional Research Service, 2006); Congressional Research Service, "Joint Education Courses Available through the Department of Defense in Calendar Year 2008," *Report to Congress* (Washington D.C., Congressional Research Service, 2009).

determination by Congress that the services were not working in a cohesive manner. This required wholesale reevaluations of not only operations, but training for the individuals that were going to work in that environment. One outcome of this is that now officers going to joint assignments usually require specific training to prepare them for joint assignments.

In 1989, the Subcommittee on Oversight and Investigations to the Committee on Armed Services initiated a review of the Professional Military Education system due to answer the questions; “How well is the nation educating its officers presently? And, what should be done to educate them more effectively in the future?”<sup>15</sup> The current Subcommittee found the Professional Military Education system had changed significantly in twenty years since the Skelton Panel; to the point that the Subcommittee questioned the timing, purpose, and effectiveness of Professional Military Education and Joint Professional Military Education. In some cases, they found officers were arriving to joint positions without proper training.<sup>16</sup> At this point it is necessary to consider what the Subcommittee was using to measure or evaluate the state of Professional Military Education. While many statistics were provided to the Subcommittee to consider, holistic evaluation appears to have been the desired outcome. One statement in particular indicates that an evaluation can be largely comparative, stating that the Naval War College’s strategic studies program is the standard by which other Professional Military Education venues should be measured.<sup>17</sup> Inquiries such as these also demonstrate that higher education and experience is seen by Congress as an important aspect of maintaining professionalism at higher levels. Congress is also concerned with the cost of these programs relative to their utility. Proper retention of officers after their educational experiences has become an ongoing concern as a result. It is important to note, however, that education is valued at many levels. In addition to the desire to use the education by the organization, individuals largely recognize the value of education and place a premium on it as well. In fact, higher

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<sup>15</sup> U.S. House of Representatives, vii.

<sup>16</sup> Ibid., xii.

<sup>17</sup> Ibid., 61.

civilian education has been used in the last decade as one of the primary incentives to retain junior officers recently.

In 2009, Robert Gerlach described the potential for sabbaticals for military officers. Gerlach described the military personnel system as having an officer career path designed with the twenty years plus career in mind. He argued several points that initially pointed to the use of sabbatical programs as a benefit to both the military as a whole and the individual. First, he argued that today's officers are in an environment that are increasingly irregular and that tactical situations today will more often have strategic implications. Second, competition for the best qualified personnel in the military has a greater pull in the environment of frequent deployments. Third, that a cultural gap has developed in the United States between the military and society as a result of decades of separation from the draft. Gerlach notes that looking at sabbaticals is not new: "As part of developing a more flexible personnel system, the Department of Defense has also explored 'greater use of extended leaves for its military officers.'"<sup>18</sup> This study, conducted in 2003 by the RAND Corporation, evaluated the advisability of sabbatical leaves for the military, finding "that should not conflict with military practice and that may provide various benefits based on their use in the civilian workforce."<sup>19</sup> Lastly, the United States Coast Guard, as an example, already has the Temporary Separation (TEMPSEP) Program for officers and enlisted personnel. Gerlach summarizes his work by stating that the military would do well to consider a change in career path that provides broadening opportunities to educate the officer toward the challenges of today, strengthen the connection with society, and provide a change for the officer that is personally beneficial as well.<sup>20</sup>

In 2010, William Raymond, Keith Beurskins, and Steven Carmichael looked at the results of a study to evaluate the Captains Career Course with the purpose of evaluating the curriculum, facilities, governance, staff and faculty, and students. Their findings included the need for high quality small group

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<sup>18</sup> Harry J. Thie, Margaret C. Harrell, and Marc Thibault, *Officer Sabbaticals: Analysis of Extended Leave Options* (Arlington, VA: Rand Corporation, 2003), xiii.

<sup>19</sup> *Ibid.*, xv-xvi.

<sup>20</sup> James M. Gerlach, *A Comprehensive Officer Sabbatical Program: Rethinking the Military Officer Career Path* (Carlisle, PA: U.S. Army War College, 2009), 25.

leaders; current, relevant, and rigorous curriculum; increased oversight and governance; classrooms updated with newer technology; and the need for the interaction that comes with a resident course. As a result, the Captains Career Course is being modified in an attempt to address these issues and nest training within the Training and Doctrine Command (TRADOC) framework. They concluded their analysis stating “Education is arguably the most important pillar of the Army Leader Development Strategy, since education allows one to gain better understanding of experiences and training.”<sup>21</sup> The reformation of the Captains Career Course is likely to be one of the more significant changes in officer education over the next few years for all branches, including Special Forces.

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<sup>21</sup> William M. Raymond, Keith R. Beurskens, Steven M. Carmichael, “The Criticality of Captains’ Education: Now and in the Future,” *Military Review* (November-December 2010), 57.

## Past & Present Education & Training Methodologies for SOF

Special Forces, like the Central Intelligence Agency, traces its roots back to the Office of Strategic Services (OSS) during World War II. The OSS was abolished in October, 1945, with some of its functions and personnel distributed between the State and War Departments. In 1952, the 10<sup>th</sup> Special Forces Group was activated. As a concept, Special Forces was based around the core mission of Unconventional Warfare, aligning it more with the OSS concept and less with the then-deactivated Rangers. The Psychological Warfare Center was started in the same year. This school was to instruct Psychological Warfare and Special Forces soldiers. In 1956, the Psychological Warfare Center was renamed the U.S. Army Special Warfare Center and School, later becoming the U.S. Army, John F. Kennedy Special Warfare Center and School. Training was conducted for those that were selected to be part of the community and training was conducted targeting their specific mission set. This meant that the training was more or less assignment oriented training. It is important to note that all of this was conducted on an extremely modest budget.<sup>22</sup>

Prior to the formation of Special Forces as a branch, Special Forces officers retained their original basic branch along with the respective branch Professional Military Education (PME). For example, during Vietnam, officers were allowed to attend the Special Forces Qualification Course as lieutenants and usually became detachment executive officers first. In order to gain more experience within this position, the executive officer position became the Assistant Detachment Commander and is filled by a warrant officer with a minimum of three years of previous detachment time. In 1987, Special Forces became a separate branch of the Army. In 1989, the major command of U.S. Army Special Operations Command was created, with the U. S. John F. Kennedy Special Warfare Center and School placed under it. Since then, Special Forces officer education paths have followed the Army's Professional Military Education path (see figure 1).

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<sup>22</sup> Alfred Paddock, *U.S. Army Special Warfare: Its Origins* (Lawrence, Kansas: University of Kansas Press, 2002), 138.



The officer en route to becoming a Special Forces officer typically attends the Special Forces Qualification course as a captain, just after completing the Captain's Career Course. He will have attended his advanced course in his original branch as well. In the 1990s, officers received no Special Forces specific training other than training courses also attended by NCOs and warrant officers. This shortfall was realized in the early 2000s. Mark Beattie noted: "SF branch is the only branch that has no formal advanced course and advanced education system for its officers."<sup>23</sup> Since then education has made two notable changes. The implementation of a SOF track at Intermediate Level Education (ILE) was developed starting in 2002 and SF officers began regularly attending the Naval Postgraduate School Special Operations/Low Intensity Conflict program as well. This, however, has resulted in the officer getting the last formal Special Operations-specific training at or about the 11<sup>th</sup> year in Army career and the 6<sup>th</sup> or 7<sup>th</sup> in his time with Special Forces. This is still some distance from the end of the typical 20+ year Army career.



Figure 1, Timeline for Officer Professional Military Education<sup>24</sup>

<sup>23</sup> Mark Beattie, "U.S. Army Special Forces Advanced Education" (Masters Thesis, Fort Leavenworth, Kansas: Command and General Staff College, 2003), 6.

<sup>24</sup> U.S. Army Accessions Command, Presentation to the National Education Conference (Fort Leavenworth, Kansas: 26 October, 2010), Slide 6.

# ANNEX A TO APPENDIX A TO ENCLOSURE A

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## OFFICER PROFESSIONAL MILITARY EDUCATION CONTINUUM

13 JULY 2009

GRADE	CADET/RESERVE/PLUM	0-100-30-3	0-4	0-90-4	0-70-80-9
EDUCATION LEVEL	PRECOMMISSIONING	PRIMARY	INTERMEDIATE	SENIOR	GENERAL/PLJAG
EDUCATIONAL INSTITUTIONS AND COURSES	<ul style="list-style-type: none"> <li>Service Academies               <ul style="list-style-type: none"> <li>ROTC</li> <li>OCS/OTS</li> </ul> </li> <li>Branch, Warfare or Staff Specialty Schools</li> <li>Primary-Level PME Courses</li> </ul>	<ul style="list-style-type: none"> <li>Air Command and Staff College</li> <li>Army Command and General Staff School</li> <li>College of Naval Command and Staff</li> <li>Marine Corps Command and Staff College</li> <li>JFSC, Joint and Combined Warfighting School, AFME</li> </ul>	<ul style="list-style-type: none"> <li>All War College</li> <li>Army War College</li> <li>College of Naval Warfare</li> <li>Marine Corps War College</li> <li>Industrial College of the Armed Forces<sup>1</sup></li> <li>National War College<sup>1</sup></li> <li>JFSC, Joint and Combined Warfighting School, AFME</li> <li>JFSC, Joint Advanced Warfighting School</li> </ul>	<ul style="list-style-type: none"> <li>CAPSTONE</li> <li>Joint Functional Component Commander Courses</li> <li>SJOCAC</li> <li>Joint Flag Officer Warfighting Course</li> <li>Pinnacle</li> </ul>	
LEVELS OF WAR EMPHASIZED	Conceptual Awareness of all Levels				
FOCUS OF MILITARY EDUCATION	<ul style="list-style-type: none"> <li>Introduction to Services Missions</li> </ul>	<ul style="list-style-type: none"> <li>Assigned Branch Warfare or Staff Specialty</li> </ul>	<ul style="list-style-type: none"> <li>Working within the context of Operational Art</li> <li>Intro to Theater strategy and plans, national military strategy and national security strategy</li> <li>Develop analytical capabilities and creative thought</li> </ul>	<ul style="list-style-type: none"> <li>Service Schools: strategic leadership, national military strategy and theater strategy</li> <li>NWCC: national security strategy</li> <li>ICAF: national security strategy with emphasis on the resource components</li> </ul>	<ul style="list-style-type: none"> <li>Joint leaders and national security</li> <li>Interagency process</li> <li>Multinational operations</li> </ul>
JOINT EMPHASIS	<ul style="list-style-type: none"> <li>Joint Introduction</li> <li>National Military Capabilities and Organization</li> <li>Foundation of Joint Warfare</li> </ul>	<p><u>Joint Awareness</u></p> <ul style="list-style-type: none"> <li>Joint Warfare Fundamentals</li> <li>Joint Campaigning</li> </ul>	<p><u>JPME Phase I</u></p> <ul style="list-style-type: none"> <li>National security strategy</li> <li>National planning systems and processes</li> <li>National military strategy and organization</li> <li>Joint strategic leader development</li> <li>National Planning Systems and Processes</li> <li>Joint Warfare, Theater Strategy and Campaigning</li> <li>Integration of Joint, Interagency, intergovernmental and multinational capabilities</li> </ul> <p><u>JPME Phase II</u></p> <ul style="list-style-type: none"> <li>National security strategy</li> <li>National military strategy</li> <li>Joint warfare, theater strategy and campaigning in a joint, interagency, intergovernmental, and multinational environment</li> <li>National and joint planning systems and processes</li> <li>Integration of Joint, IA, intergovernmental, and multinational capabilities</li> <li>Joint strategic leadership</li> </ul> <p><u>APME</u></p> <ul style="list-style-type: none"> <li>National security strategy</li> <li>Joint, interagency, intergovernmental, and Multinational Capabilities</li> <li>Theater strategy and campaigning</li> <li>Joint planning processes and systems</li> </ul>	<p><u>CAPSTONE</u></p> <ul style="list-style-type: none"> <li>National security strategy</li> <li>Joint operations at Joint Functional Component Commander Course &amp; JFVC/C</li> <li>National security strategy</li> <li>National planning systems and organization</li> <li>National military strategy &amp; organization</li> <li>Threat strategy, campaigning and military operations in joint, interagency, intergovernmental, and multinational environment</li> <li>Information operations</li> <li>Strategic leader development</li> <li>Joint/Combined force development</li> <li>Building &amp; commanding the joint combined force</li> <li>The JFC and the IA, MCA, NMS</li> </ul>	

<sup>1</sup>ICAF, NWCC, and JAWS offer single-phase JPME

A-A-A-1

Appendix A  
Enclosure A

Figure 2, The PME Continuum<sup>25</sup>

<sup>25</sup> Chairman of the Joint Chiefs of Staff, Instruction. Officer Professional Military Education Policy

## Contemporary Challenges

The challenges of educating and training leaders today, while conceptually similar to the requirements of the past, has and will run into impediments and limits inherent in certain aspect combinations. The interactions of scale, management, population shifts, class size and composition, virtual education, interpretations of quality, methods of effectiveness, and cost all interact with each other. Even attempts to improve learning opportunities in a cost-effective manner will have unforeseen or undesirable consequences.

Neustadt and May stressed that one of the larger problems in measuring education efficacy was the problem of measuring on a large scale. In an organization as large as the Army, measures of performance have proved to be difficult to manage due to the interrelations of educational concepts at subordinate levels. This makes measuring the effectiveness of these programs difficult, even for educational and training professionals. Looking at a basket of individual measures, no matter how broad, may cause results to be masked by other events. An example of these conflicting goals and measures can be easily seen outside of the military in the case of the National Performance Review in the early Clinton administration. In this case, there was an increased impetus to assess the workforce development system, designed to improve performance measures of publicly funded education programs. The results of the program at first looked promising. The program had five important developments or themes that emerged in the context of their effort: limiting government and increased accountability; improving efficacy and efficiency; use common measures and system practices where possible; a use of results-based outcomes in government management; and a generally restructured social programs including welfare and workforce development.<sup>26</sup> While this seemingly holistic approach did appear to reduce costs, the focus on individual measures was not responsible for the end results. The reported cost savings shown in

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(OPMEP) CJCSI 1800.01C (Washington DC: DoD 2009), 27.

<sup>26</sup> Sarah Looney, Christopher T. King, "Proposed Approaches to Workforce Development Performance Measurement," *Occasional Brief Series*, v.1 n.1 (Austin, TX: University of Texas, February 2005), 1.

overall government jobs were significant but were actually the result of general government downsizing programmed prior to program implementation, mostly in the Department of Defense.<sup>27</sup> Thus, the limited understanding of the system of elements in place when determining their measures led to a false correlation. Similarly within the Army, an increase in the overall aptitude of those accessed to the Army may show a subsequent increase in Special Forces performance testing, masking the simultaneous changes in training curriculum and/or methodology.

Recognition of the ineffectiveness of existing processes such as what happened to the National Performance Review, is a key step to improving, but simply adding or changing measures may still provide the wrong incentives to managers. This happened in 2001 when President Bush directed continued management reforms that were to build on those of previous administrations to improve Government education programs. As part of this effort, the Office of Management and Budget implemented a series of measures that were common across cabinet level departments and designed to measure performance both in and between departments. Eight performance measures in the areas of training and education were developed. Four of these were designed for adults and four were designed for youth.<sup>28</sup> The four measures designed for measuring adult programs included the titles of Entered Employment, Retention, Earnings Increase, and Efficiency. Entered Employment was intended to measure how well the program aided the individual in gaining/regaining employment and was defined as the percentage of the workforce development system participants that were employed after completing a related program. Retention focused on those program graduates that were still employed in the 2<sup>nd</sup> and 3<sup>rd</sup> quarters after completion. Earnings Increase measured the change in income from pre-program levels to post-3<sup>rd</sup> quarter graduation levels of participants. Last was the cost of each participant annually. These measures did provide some advantages in that they are an attempt a system-oriented approach and better

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<sup>27</sup> Donald Kettl, *The Global Public Management Revolution* (Washington, DC: Brookings Institution, 2005), 19-40.

<sup>28</sup> Looney and King, 2.

resonate with taxpayers.<sup>29</sup> However, there are also some serious issues and possible unintended consequences of these actions. Each of these individual measures created an incentive for program managers to do what was necessary to raise the numbers, possibly at the expense of other aspects that were contrary to the intended outcome. The cost per individual, for example focused on cost rather than the effects of the education or training. In case of military programs, managers may have similar pressure to implement programs that lower critical resources in order to reduce costs. Another undesired effect would be for programs to maximize participation relative to resources used in programs such as the instructor to student ratio, without a true measure of the impact on education quality received by the individual.<sup>30</sup>

Another issue in education is the problem of measuring the same population over the long term. Over a long term the group will be comprised of different individuals. Condelli noted that measurement costs were reduced because it reduced the burden on local programs when conducting a state-level survey that was supposed to collect long term outcomes of students relative to employment, education, and training. However, this method did not allow the data to be tied back to the individuals or even specific programs. This became an issue just after planning the pilot program due to the passing of the Workforce Investment Act. This Act required the evaluation of individual programs, not the overall outcome.<sup>31</sup> This broad approach, although not meeting the National Reporting System requirements from the outset, was still performed as a means to explore other ways to measure and see if any components of the plan were salvageable. Of course, the cost advantage can be seen when one looks at the benefit of obtaining a significant sample size over the level of the state versus each local program. Idaho, Maryland, and Rhode Island specifically were able to either take advantage of existing data collecting structures or contract the collection on a temporary basis. The contracting option had the added benefit of not impacting any other staff functions within the existing state systems. In addition to the main problem of targeting outcomes to

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<sup>29</sup> Ibid., 3.

<sup>30</sup> Ibid., 2.

<sup>31</sup> Condelli and Padilla, 11.

the individual programs, there were other disadvantages related to ensuring correct collection. In some cases the individual programs had to be contacted anyway and in others earlier data collection had not occurred in a manner that was compatible with the later collection.<sup>32</sup>

Data matching has been used as a partial fix to some of the collection problems when it comes to data format and serves to reduce expense in many cases. This is the process where two or more agencies share data in overlapping groups to match participants to outcomes. The data is linked via a unique identifier, more often than not a Social Security number. This produces an aggregated record with data from multiple agencies to assist in meeting their reporting and accountability requirements.<sup>33</sup> While others, including this author, have used this method to gain more complete data, increased privacy concerns in the past three decades have ultimately led to the practice of not including a complete social security number for people in US Government organizations. This, of course, prevents the unique identification of individuals in many cases, which is exactly what is needed for detailed analysis.

One area of contention that has been looked at regarding effectiveness in the civilian education realm is class size. In a 1999 study by Victor M. H. Bordon and Kathy L. Burton conducted to look at class size relative to learning outcomes noted that small class size (5-30 students) resulted in better overall performance when compared to mid-sized (31-90 students), and larger classes (91 or greater students). Bordon and Burton also noted that the difference was disproportionately greater in lower ability students.<sup>34</sup> Many current officer education programs advocate a small class size that is usually less than 20 students to facilitate discussion and optimal learning. While this appears easy to facilitate, the desire to incorporate other measures such as the integration of joint and international students in each group can

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<sup>32</sup> Ibid., 15.

<sup>33</sup> Ibid., 16.

<sup>34</sup> Victor M. H. Bordon, Kathy L. Burton, *The Impact of Class Size on Student Performance in Introductory Courses*. *AIR Annual Forum Paper*, (West Lafayette, Indiana, University of Purdue, June, 1999) accessed November 12 from Education Resources Information Center, <http://www.eric.ed.gov/ERICWebPortal/contentdelivery/servlet/ERICServlet?accno=ED433782>, 9.

make maintaining this class size more challenging depending on the diversity of the student population.<sup>35</sup> The basic costs of staff and facilities are also significant obstacles to many programs (and may become more so). Gaining sufficient capacity in budget, buildings, training facilities, and support staff can take years to address in some cases. Thus the move to add on to, or expand what is gained in existing training and education venues is usually considered a selling feature for some personnel managers. This has been also true within the Special Operations populations due to a desire to conserve Major Force Program -11 dollars where possible for use in other areas.<sup>36</sup>

Nesting additional and/or alternate experiences within existing educational forums has also been tried in the past with mixed success. Additional or in-lieu-of classes for Special Operations officers within the Army's Intermediate Level Education program have been, and in some cases still are, attempts to provide more Special Operations-specific education while taking advantage of time spent in meeting the overall Army requirements. By not adding significant length to the curriculum, time away from family and operational units is kept at a minimum. The Joint Advanced Warfighter Course (JAWS) and the Special Operations Forces educational tracks were taught to limited student populations in conjunction with the Advanced Operations and Warfighters Course (AWOC). The drawbacks in the case of substitution, however, were seen in the stability operations component of Intermediate Level Education. Special Operations officers are typically significant student contributors in this area. Participating in these other tracks comes at the cost of being largely absent from the very portion of the curriculum focused on stability operations and may be to the detriment of the rest of the class.<sup>37</sup> Since there are often many measures available in a process it can be difficult to determine the right mix of measures to select. This also comes with the realization that not everything can be measured. Many of

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<sup>35</sup> U.S. House of Representatives, 66.

<sup>36</sup> Major Force Program (MFP)-11 dollars are designed to deal with Special Operations-specific requirements. General purpose force organizations and weapon systems are supported by Major Force Program-2. Special Operations Forces are typically funded by a mixture of both, using MFP-11 only where there is a SOF-specific difference.

<sup>37</sup> Gerald J. Leonard, *Curriculum For Stability Operations - A Look At The Command And General Staff School* (Fort Leavenworth, KS: U.S. Army Command and General Staff College, 2007), 76.

the processes used are limited or inappropriate for the venue of the learning experience. As the use of virtual and internet-based courses increases in many areas, the relative measures of performance and effectiveness for events can be difficult to measure.<sup>38</sup> This may be further complicated when migrating events from live training where the measures used may not have been adequate in the first place. It is important to note that course designers and strategic sponsors need to know why the original principles used were or were not successful as well as knowing the level of gain or shortfall in all areas at the time of migration from live to virtual.

Different mixes of principles, procedures, concepts, facets, and processes may lend themselves to specific instructional methodologies. The depth and breadth of what may be experienced and observed may change significantly. Thus the ability to compare effectiveness during instruction may change as well. Looking at one of these methodologies can provide some insight in demonstrating key differences in live versus virtual teaching environments. Energizers are short activities designed to develop readiness for a subsequent training session or learning event. These activities are designed to stimulate or refocus a group during lethargic times such as after a lunch break. They may involve some aspect of physical activity to aid in the learning and, as a result, may impact the effectiveness of the event.<sup>39</sup> If this physical activity did contribute, can it be replicated in the virtual environment, and if so, how is it to be monitored? It is at this point that the difficulty of ensuring consistency between the environments can also be imagined. If the methodology is no longer feasible in the new medium, then either the methodology or content must be changed in the new environment. As a result, this may change the data capture points and overall in-process measurement techniques available. The quality of the program may suffer as a result.

Different ideas of quality are another aspect of measuring outcomes that can cause significant variation in evaluation of training and education. Educators in general have paid little attention to

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<sup>38</sup> Ruth C. Clark and Ann Kwinn, *The New Virtual Classroom: Evidence-Based Guidelines for Synchronous e-Learning* (Pfeiffer, 2007), 229.

<sup>39</sup> Ibid., 282-284.



answering the question of specific characteristics of quality that should be considered in an educational context. Some admit that they are unable to specifically define quality but are able to recognize it.<sup>40</sup> While this may indeed be the nature of art and humanism, the inability to at least define aspects of quality for any type of public education program does not consider accountability to the public. Since educational quality is an inherent factor of educational outcomes, the accountability of program success or failure demands an acceptable level of objectivity through quality decomposition. Likewise, knowing what constitutes quality over time is essential in order to modify learning events rapidly enough to keep pace with short term demands and at least anticipate resulting long-term changes.

One controversial aspect in learning is the level of interaction of the student. Typically, participation in group or seminar discussion constitutes active learning. By contrast, attending lectures, watching films, etc. constitutes so-called passive learning.<sup>41</sup> The difference between active and passive learning is viewed as significant by many educators implying that active learning is preferable to passive learning. It should be noted, however, that the actual advantage of active learning may be negligible when looking only at short and mid-term knowledge retention.<sup>42</sup> Regardless, most educators would argue that it is not feasible for all learning venues to be active. Thus it may be important to know why passive learning is preferred or not in order to meet the desired outcomes. The House Armed Services Committee (The Skelton Panel), in their look at Professional Military Education, did not specify a target ratio of active to passive hours in a curriculum, but did explicitly praise one school [The Army Command and General Staff College] for having a curriculum that consisted of only 10% passive education.<sup>43</sup> Comments such as these by those who wield a high level of influence may lead to focusing on specific measures of performance that are not specially based on a correlation to outcomes.

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<sup>40</sup> Malcolm Tight, *Key Concepts in Adult Education and Training* (New York: Routledge, 1996), 124.

<sup>41</sup> U.S. House of Representatives, 64.

<sup>42</sup> Paul Haidet, Robert O. Morgan, Kimberly O'Malley, Betty Jeanne Moran, and Boyd F. Richards, "A Controlled Trial of Active Versus Passive Learning Strategies in a Large Group Setting," in *Advances in Health Sciences Education* (Netherlands: Kluwer Academic Publishers, 2004), 15–16.

<sup>43</sup> U.S. House of Representatives, 64.

When considering the aspect of measuring success and failure, it is necessary to consider lifelong learning from both the individual perspective and the perspective of the organization. That is, what is the status of the individual's education and training relative to what is desired from and by the individual in the future? Many elements such as tests, workshops, and career counseling sessions have to be included in this role.<sup>44</sup> By contrast, for organizations in the military and certainly for Special Operations Officers, the required elements do not often reside in one person. Thus organizations must look at lifelong learning through the lens of their personnel, which are constantly changing positions or being replaced, making continuity difficult.

A concept that has been the primary means of determining effectiveness in civilian organizations is performance attributed to individual learning and competence. Individual learning is a primary concern because it is a basic tenet of organizational learning. Basically, an organization cannot learn unless its individuals learn.<sup>45</sup> This is no different within the military where it is also difficult to measure how and to what extent the skills officers learn impact their organizations. Individual adaptability, for example, is not sufficient for an officer. They are also expected to influence teams and organizations in order to work together.<sup>46</sup> One way that has been looked at to measure the ability of an officer to be personally adaptable is in the ability to influence others. To address this officers conduct self-assessments using organized informational tools that include: tests; feedback from subordinates, peers, and superiors; results of knowledge and skill assessment, and self-assessment questionnaires. These groupings of assessment assist the individual in the collection, integration, and synthesis of progress toward goals. For example, the Army Research Institute's Test of Adaptable Personality for special operations Soldiers attempts to measure adaptability through past behaviors as well as reactions to work events. It is a questionnaire

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<sup>44</sup> Tight, 80.

<sup>45</sup> Peter M. Senge, *The Fifth Discipline: The Art and Practice of The Learning Organization* (New York: Crown Business, 2006), 129.

<sup>46</sup> Rose A. Mueller-Hanson, Susan S. White, David W. Dorsey, Elaine D. Pulakos, *Training Adaptable Leaders: Lessons from Research and Practice* (Alexandria, VA: U.S. Army Research Institute For the Behavioral and Social Sciences, 2005), 3.

designed to measure the attributes of achievement orientation, cognitive flexibility, fitness motivation, peer leadership, diplomacy, and being a team player. By making the officer more self-aware, these assessment facilitate improved influence within their organizations. In other words, having an accurate awareness of how one is perceived by others, he or she is able to more easily alter their behavior in order to work better with those in the organization.<sup>47</sup>

Due to the difficulty in finding objective measurements as well as not interfering with the learning event, data capture issues may arise from a limited set of tools such as survey questionnaires, checklists, and records-based capture forms. Figure 3 demonstrates data capture instruments used in the Army Research Institutes' *Methodology for Evaluating Transfer of Learning from the U.S. Army's Advanced Leaders Course*.<sup>48</sup> Many of these measures demonstrate the difficulty in finding objective measures that will adequately show progress toward the desired outcomes. These more subjective measures are fuzzy and can make it difficult to ensure inter-rater reliability.<sup>49</sup> Nonetheless, measures such as these appear to be what is available and feasible.

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<sup>47</sup> Ibid., 19.

<sup>48</sup> Bruce C. Leibrcht, Richard L. Wampler, and Robert J. Pleban, *Methodology for Evaluating Transfer of Learning from the U.S. Army's Advanced Leaders Course* (Fort Benning, GA: U.S. Army Research Institute for the Behavioral and Social Sciences, June 2009), 20.

<sup>49</sup> Inter-rater Reliability is the degree to which two or more recorders agree; the consistency of a rating system.

*Data Collection Instruments Planned for the Evaluation*

Instrument	When	Measurement Focus
<i>Survey Questionnaires</i>		
Biographical Inventory	Start of course	Demographics, schooling, assignments, deployments
ALC Students Survey #1	Start of course	NCO competencies, motivation, course expectations
ALC Students Survey #2	End of course	Opportunities, NCO competencies, learning outcomes
End State Participant Survey	End state	Change in own and unit behavior and performance
Unit Leaders Survey	End state	Change in NCO and unit behavior and performance
Unit Peers Survey	End state	Change in NCO and unit behavior and performance
<i>Focus Group Protocols</i>		
ALC Students Focus Group	End of course	Opportunities, learning outcomes, expectations
Participants Focus Group	End state	Behavior/performance changes, examples, benefits
Unit Leaders Focus Group	End state	Behavior/performance changes, examples, benefits
Unit Peers Focus Group	End state	Behavior/performance changes, examples, benefits
<i>Miscellaneous Instruments</i>		
Situational Judgment Test #1	Start of course	Objective NCO abilities (pre-coursework)
Situational Judgment Test #2	End of course	Objective NCO abilities (post-coursework)
Application Checklist	Recurring	On-the-job application opportunities, activity examples
Unit Records Capture Form	End state	Personnel incidents, individual/unit proficiency scores

**Figure 3, Data Collection Instruments used in U.S. Army's Advanced Leader Course<sup>50</sup>**

The process of leaders and educators determining what soldiers are to be taught, what experiences are relevant and desirable, as well as how and when this learning will be most useful may not be a simple process. Measuring or evaluating the results over the period of a career is arguably more difficult but may more accurately demonstrate the true return on educational investment. For example, critical thinking has been added to the curriculum of Special Forces officer education venues in recent years, with the intent of better preparing these leaders to deal with a greater variety of problems in the future. Analysis of this line of education reveals some problems. First, although the idea is well intentioned, it does not always address the issue of what defines critical thinking or whether critical thinking can be defined. In the defense of critical thinking proponents, however, this may again be something that people either do or do not while defying a true definition. Common measures of critical thinking do provide some level of comparability in research. Some studies, however, have revealed that the tests all suffer

<sup>50</sup> Leibrecht, Wampler, and Pleban, 20.

from low internal reliability estimates and poor psychometric markers.<sup>51</sup> Thus, they may represent different abilities.<sup>52</sup> Next, there is also disagreement on whether critical thinking is episodic, dispositional, or ability based. Episodic learning is associated with time-limited event or state that unique to the individual. Dispositional learning is a tendency to behave in certain ways or have certain attitudes toward aspects of learning. Abilities are, of course, acquired skills.<sup>53</sup> Since critical thinking is taught in Professional Military Education venues, determining the type composition matters in the approach to teaching it. In 1990 the American Psychological Association stated that critical thinking was composed of skills and dispositions but this has had minimal impact on the work of other researchers. Most of the research and testing available is predominately focused on skills and is thought to be possibly limiting in approach.<sup>54</sup> This sample provides only a glimpse of the conflation of issues surrounding the issue of determining effectiveness in officer education.

Measures of cost relative to the effectiveness of different educational content types such as those used in virtual classrooms are important to consider in the cost-benefit equation. In an attempt to cut back on transportation, personnel, and material production costs, virtual and distance training is becoming more prevalent in military training and education. Special Forces is no different in this aspect. Distance learning has been incorporated in past elements of education in both NCO and warrant officer training with mixed results. Measures used in these environments are able to focus on the content types of facts, concepts, processes, procedures, and principles. The features of the medium used, however, can impact how instructional methods are implemented.<sup>55</sup>

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<sup>51</sup> Psychometrics is the field of study concerned with psychological measurement related to education including measures of personality traits, abilities, and attitudes toward education.

<sup>52</sup> Susan C. Fischer and V. Alan Spiker, Sharon L. Reidel, *Critical Thinking Training for Army Officers Volume Two: A Model of Critical Thinking* (Arlington, VA: U.S. Army Research Institute for the Behavioral and Social Sciences, 2009), 6.

<sup>53</sup> *Ibid.*, 8.

<sup>54</sup> *Ibid.*, 8.

<sup>55</sup> Clark and Kwinn, 69-70.

These challenges have been, and are, being examined on a regular basis by a number of organizations at all scales in many venues both within and exterior to the military. There are arguably few places where the benefits of integrating these efforts have more potential. While attempts to solve or, at least, ameliorate these challenges are far from having all the answers, the Special Forces community needs to participate, if not lead, the effort their applied integration toward quality, effective, and adaptable leadership.

## Analysis and Recommendations

The scale of war has evolved from single fights and decisive grand battles into a series of integrated campaigns leading to the need for operational art.<sup>56</sup> Similarly, leader education has evolved from the outcome of single classes to the campaigns of career learning requiring educational art. Bridging a broader base of conceptual knowledge supported by representative details of effective measures is necessary to support the process of educating effective and adaptable leaders. Like the elements of operational design, understanding the purpose and nature of activities in effective learning provide a framework to consider educational art. Organizational investment, organizational behavior, barriers to learning, sequence of education over space and time, the role of doctrine, and the terrain of the human brain, are among these attributes of the education system that are necessary to consider in a holistic fashion in order to take education to the next level. Lastly, like the formation of the general staff, building your educational staff is a cornerstone of leader education.

The purpose of the Special Forces officer within the U.S. Army must be considered when looking at the structure of the officer's education and the associated measures of effectiveness and performance. The expected minimum and optimum performance levels of the officer individually must be determined. As a leader, the impact on various levels of their organizations also has to be considered. Next, the effects of training relative to time, cost, and other programs have to be considered.

The purpose of the Special Forces officer as laid out in Department of the Army Pamphlet 600-3, *Commissioned Officer Professional Development and Career Management* states :

SF officers plan, coordinate, direct, and participate in SF units performing the above core tasks in all operational environments. An SF captain commands a Special Forces Operational Detachment A (SFODA). The SFODA is a flexible and highly trained unit, which includes (in addition to the commander) 1 SF warrant officer and 10 SF

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<sup>56</sup> Operational Art is defined in Joint Publication 1-02 as “The application of creative imagination by commanders and staffs —supported by their skill, knowledge, and experience — to design strategies, campaigns, and / or operations and organize and employ military forces. Operational art integrates ends, ways, and means across the levels of war.”

noncommissioned officers (NCOs). The NCOs hold one or more of the following specialties: operations, intelligence, weapons, communications, engineering, or medical. The successful SFODA must be adept at accomplishing a wide range of requirements including training management, logistical planning, resource management, training plan development for foreign forces, and negotiating and working with foreign and U.S. government agencies and country teams. SF officers that successfully command an SFODA may later command larger SF units. They serve on upper echelon SF, Army and joint special operations task force (JSOTF) staffs, as SOF observer-controllers at Combat Training Centers, in special mission units (SMUs), and in interagency assignments. They also serve as special operations staff officers at various higher-level conventional Army and joint staffs as well as serving on the staff and faculty of the U.S. Army John F. Kennedy Special Warfare Center and School (USAJFKSWCS).<sup>57</sup>

This is a broad range of positions for which the expectations of performance are commensurately broad. Measures of effectiveness must take this range of expectations into account while still providing sufficient detail to adequately provide decision makers with insight to anticipate more specific and near-term outcomes of education in a given job. This again points to the requirement to be able to handle a variety of tasks and situations in which most specifics will be unavailable beforehand.

Much of the content in military education and training has long been focused on decisive engagements. One example of this can be found in Army Regulation 350-1 which looks to train leaders to be decisive in almost everything, noting: “Leader development is the deliberate, continuous, sequential, and progressive process - grounded in Army values - that develop Soldiers and Army civilians into competent and confident leaders capable of decisive action, mission accomplishment, and taking care of Soldiers and their Families.”<sup>58</sup> Decisive action, decisive results, and decisive victory are common terms that every Army officer knows well in doctrine of all types. Decisive engagement, however, is not expected to be the way to deal with many projected near term threats. More recently the Army has come to a greater appreciation of the threat distribution. In 2009 the Army G3/5/7 noted that: “Institutional policies and processes optimized for a world of mass and rapid decisive campaigns against predictable

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<sup>57</sup> Pamphlet 600-3, *Commissioned Officer Professional Development and Career Management*, 1 February 2010 (Washington D.C.: Headquarters, Department of the Army, 2010), 167.

<sup>58</sup> Army Regulation 350-1, *Army Training and Leader Development*, 18 December 2009 (Washington D.C.: Headquarters, Department of the Army, 2009), 3.



peer competitors must adapt to the new norm of uncertainty and protracted conflict.”<sup>59</sup> Although Low Intensity Conflict emerged as a concern in the mid-1980s, the definition of Low Intensity Conflict was too broad to deal with doctrinal problems.<sup>60</sup> Today the Army still struggles to meet the training and educational demands of this shift in employment across all branches. Likewise, Special Forces must be able to meet the changing Special Operations-specific and Special Forces-specific requirements as well. This shift toward Low Intensity Conflict has led to greater demands of Special Operations forces both quantity and breadth of mission employment. In a 2009 testimony to the House Subcommittee on Terrorism, Robert Martinage stated: “SOF will need to be shaped, sized, and postured to: Conduct proactive, sustained ‘man hunting’ and disruption operations globally; build partner capacity in relevant ground, air, and maritime capabilities in scores of countries on a steady-state basis; help generate persistent air and maritime surveillance and strike coverage over ‘under-governed’ areas and relevant littoral zones; and employ unconventional warfare against state sponsors of terrorism and transnational terrorist groups globally.”<sup>61</sup> Measuring success with broad ideas such as these is a challenge and, as mentioned earlier, body counts do not tell the whole story. What is necessary is the ability to attribute components of the outcome to specific training, education, or previous experiences. With individualized measures, this is next to impossible.

Even if the content is correct, it is important to remember that learning within the military is not done for its own sake. Actually applying what is learned is the entire point of learning.<sup>62</sup> In the military, where lives and mission success are at stake, the ability for the individual to apply learning should be a primary goal of learning events. This ability to apply what is learned is not happening in many cases.<sup>63</sup>

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<sup>59</sup> United States Army G3/5/7, *A Leadership Development Strategy for a 21<sup>st</sup> Century Army* (Washington D.C.: United States Army G3/5/7, 2009), 6.

<sup>60</sup> TRADOC, *Transforming the Army: TRADOC’s First Thirty Years, 1973-2003* (Virginia: United States Army Training and Doctrine Command, Military History Office, 2003), 56.

<sup>61</sup> Robert Martinage, *Special Operations Forces: Challenges and Opportunities* (Washington D.C.: CSBA Testimony to the House Subcommittee on Terrorism, Unconventional Threats and Capabilities, 2009), 3.

<sup>62</sup> Leibrecht, Wampler, and Pleban, 3.

<sup>63</sup> *Ibid.*, 3.

The return on investment in the measurement of transfer, however, may facilitate looking at intervening/contextual variables and subsequent improvement of programs.<sup>64</sup>

The investment of the organization into sub-organizations and individuals is apparent in the long-term overall success of the organization. Alton Dunham and Karen Spurgeon noted this in the case of obvious stratifications between college and professional sports, noting that organizational improvement is not just a progression and the ability to select from a larger pool of athletes at the lower level (i.e. similar to the progression of high school to college sports), but is impacted by the level of resources applied over time. In their example, individual competency is a great predictor of organizational success. The higher investment in resources available to the professional team in the way of players, salaries, facilities results in a visibly different level of performance.<sup>65</sup>

Of course, just applying resources in the form of learning events to individuals will not, in and of itself, result in better outcomes. Applying resources to structure only serves to enhance the level of athlete you have to start with and success requires that individuals must have both the capacity and the desire to improve. Monique Boekaerts notes, however, that educators must take an active leadership role in facilitating student motivation by bridging what is relevant in the students mind to the material: “It is important to realize that classroom climate and the way you interact with your students facilitates or impedes their motivation. Try to make tasks and activities meaningful for your students by referring to the intrinsic value of the task and to potential applications in other subject areas and outside school.”<sup>66</sup>

Motivation and leadership are certainly key components of individual learning effectiveness within organizations. In addition, leaders are responsible for the overall culture, or climate, of an organization.

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<sup>64</sup> Ibid., 3.

<sup>65</sup> Alton Dunham and Karen Spurgeon, “The Motivation Factor: The Invisible Barriers to Organizational Effectiveness”, in *Perspectives on Leadership* (Fort Belvoir, V: Army Management Staff College, 2008), 174.

<sup>65</sup> Ibid., 175-176.

<sup>65</sup> Kelly Strand, “Mastering Team Building Principles,” in *Perspectives on Leadership* (Fort Belvoir, VA: Army Management Staff College, 2008), 67.

<sup>66</sup> Monique Boekaerts, “Motivation to Learn”, *Educational Practices*, Series 10 (Brussels, Switzerland: Academy of Education, 2002), 12-13.

An organizational culture, whether operational or in a school setting, must foster, or at least not inhibit development. Dunham and Spurgeon note; “If an organization has a hidden culture that hinders forward progress, nothing gets done. The hidden culture demonstrates a failure to support the major body organs that productively sustain the health of an organization. It is this potentially negative element that must be unveiled before significant improvement can be achieved. The organizations that display ineffective interdependence are best described as dysfunctional.”<sup>67</sup> Thus leaders need to be well-educated about their about their own organizations and have a plan to manage educational barriers.

There are a number of tendencies in some organizations that become the aforementioned barriers to learning and overall organizational effectiveness. An example of a couple of these barriers begins to illuminate their potential in the impedance of organizational goals and can skew any measurement of new leader impact on an existing organization. Malicious Compliance is when a follower appears to comply with decisions, but subverts the spirit behind the decision. Mirroring is when a leader subconsciously promotes those that are closer in overall characteristics. In the military, and more specifically within Special Forces, leader turnover in organizations is frequent. The new leader may find his or herself in an organization that is suffering from the effects of these organizational learning barriers and needs the ability to recognize them as well as their impact on goals. It is likely that these problems will be complicated with multi-national staff, making it harder for the commander to apply corrective measures that would be appropriate in more homogenous setting. Lastly, lag time and direct influence of leaders make it necessary to conduct many of these measures after a leader has departed the organization to determine the level of institutionalization. A staff with a broader background in organizational theory, psychology, political science and public management may be more suited to assist the commander to identify barriers, means to reduce organizational impediments, and provide the continuity necessary for institutional changes.

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<sup>67</sup> Dunham and Spurgeon, 174.

The next issue to consider in a set of measures that supports holistic evaluation is content sequencing. What should be considered in the relevance of previous training at different points in time within an officer's future? One of the first things to consider are the aspects of the educational experience that will not change or are cumulative. While the utility of counseling and mentoring subordinates, for example, may remain constant, or on a steady trajectory, the relevance of equipment-specific training may become obsolete either through the career progression of the officer or as a result of the obsolescence of the equipment itself. Doctrinal employment of systems may also play a part in degrading the benefits of training and education due to its prescriptive impact on educational material and its potential for restrictive effects on thinking. While a significant portion of doctrine is not intended to be prescriptive, it becomes both a starting point and supplementary position that can restrict thought when doctrinal guidance overlaps with high levels of specificity in educational environments. While there are some benefits to this unifying effect in sequencing influence over space and time, the combination of too much specificity and volume makes it difficult to change fast enough to meet many challenges in the current environment and almost impossible to attain universal adoption by organizations. This actually provides a negative feedback into the organization, creating confusion in some cases where the intent was to reduce it. Matching these changes to educational requirements only exacerbates this situation in development and deployment of curriculum. While many training programs consider judgments during and immediately after experiences, the lasting effects must be considered at predetermined intervals or events.<sup>68</sup> These effects do not coincide with rapid changes in doctrine. Thus, perhaps we should have more general doctrine that changes less frequently. Leaders can then make more rapid and holistic decisions based on representative measures and observations without the confusion provided by rapid doctrinal changes.

Aspects of military training and education tend to occur in the order they are expected to be experienced. Elements of training and education are incorporated just prior to the expected utility of the

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<sup>68</sup> Tight, 138.

material to be learned. Many aspects of learning events do appear to support this idea logically such as presenting current staff procedures just prior to taking a staff job. Some material presented in this manner is likely more relevant to the time of application and may be retained in greater amount than material presented at a much earlier time relative to utilization. This does not always take into consideration, however, that many learning elements are progressive, building on each other. An example of this aspect can be seen in the requirement for the military to operate jointly. For Special Operations Forces this requirement is present at the earliest points in a career for officers and NCOs. The issue of jointly educating officers adds even more complexity with regard to military-wide procedures and policies. Therefore timing and sequencing must be considered not only for a specialty, branch, or service, but *all* services. The structure, time, and duration must be acceptable to all involved. A first experience in learning the joint environment may need to be earlier than when the skill set is really critical. Then again, sooner is not necessarily better from the learning perspective of the individual. LCDR Robert W. Lyonnais, USN noted that; “There is also general agreement that JPME must be rigorous, obtained as early as possible in an officer’s career, studied by all officers not only the ones selected for joint assignments, officers are most effective when they are competent in their service and finally that the current system is not as effective as it could or should be.”<sup>69</sup> Lyonnais noted that jointness is a culture and made recommendations including: expanding resident joint education to all levels; creation of joint military institutions that are true universities able to award bachelors, masters, and doctoral degrees; and requirements for joint assignments. The concept of expanding education of officers is still relevant. For Special Forces officers, the joint concept should be expanded to joint and combined, wherein the officers are required to gain at least some portion of their education in another language or culture. Currently, some officers are provided this opportunity but the options are more limited for most.

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<sup>69</sup> Robert W. Lyonnais, “Joint Professional Military Education: Time for a New Goal” (Leavenworth, KS: monograph, U.S. School for Advanced Military Studies, 2003), 3.

Next, we should be looking at the context in which these leaders will be asked to perform in the future. For instance, rapid identification of the situation at the tactical level, or coup d'oeil has long been recognized as a desirable trait of leaders.<sup>70</sup> This understanding comes from the individual's conceptual stockpile of education, experience, and their ability to form an understanding while remaining critical of the logic behind the understanding. In this way the increasing breadth of experiences directly relates to the capacity of a leader's understanding. This concept is even more important later in a career. Quick recognition of changes in situation at higher levels requires calling upon a comparably greater breadth of knowledge and experience to make sense of a situation quickly. While this concept is taught in the military and even at Columbia Business School, it is debatable if this skill can be measured relative to prior education and experience.<sup>71</sup>

Since the future is unknown, what aspects can be predicted? One thing that is certain, we will continue to expect these leaders to solve problems. Arming these leaders with knowledge of tested methodologies in a variety of contextual situations will aid in optimizing their approach to unpredictable problems. One method, called Problem-Based Learning (PBL) has amplified many issues in education such as relevancy and motivation. Although, again, nothing comes for free: "while there is no clear evidence that PBL offers significant learning advantages over traditional instructional approaches, PBL medical students report more positive attitudes than students engaged in traditional courses. Learning while working on a realistic problem seems more relevant than training that presents knowledge and skills outside of an application context. Therefore, PBL lessons have great motivational potential. At the same time, learning while simultaneously solving a problem runs the risk of creating mental overload."<sup>72</sup> Nevertheless, it is better to get mental overload in training than experiencing it in the field. There are many methods that incorporate problems into their methodology that should be looked at for training and

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<sup>70</sup> Everett Dolman, *Pure Strategy: Power and Principle in the Space and Information Age (Strategy and History)* (London: Routledge, 2005), 140.

<sup>71</sup> William Dugan, *B7799 Napoleon's Glance: The Art of Strategic Intuition-Course Overview* (New York, Columbia Business School, spring 2008), 1-2.

<sup>72</sup> Clark and Kwinn, 212.

educational application at different levels. Many training events in Special Forces incorporate problems already. Perhaps some of the classroom-based educational experiences should also.

The Army has recently seen the need to increasingly deal with “ill structured problems” that has led to the introduction of a methodology to assist in problem understanding.<sup>73</sup> The Department of the Army notes that: “With the publication of FM 5-0, The Operations Process, and the introduction of design into our doctrine, we highlight the importance of understanding complex problems more fully before we seek to solve them through our traditional planning processes.”<sup>74</sup> This was to be a cornerstone of leader development strategy.<sup>75</sup> One of the aspects of ill-structured problems is that they are largely unique to the context in which they present. Often, individual judgment is used to make decisions that are in line with the desired future state. The circular nature of acquired judgment, however, begs the question of how to ensure that sound judgment is what is actually acquired; “Good judgment is usually the result of experience. And experience is frequently the result of bad judgment.”<sup>76</sup> Judgment calls are often reviewed after an event, but may be difficult to quantify. How is it possible to measure a negative? How do you know if the efforts that supposedly brought about this negative were not over-processed? Historical analogies may be used in cases where affected persons and organizations are involved. Any conclusion, however, will largely be speculative. The likely outcome relative to potential alternate events will likely not be agreed upon by every analyst of the events.<sup>77</sup>

One place that we can look at performance in context is in medical case review. Doctors and nurses are expected to act in a way that would be considered reasonable and prudent of someone at the same level of training in the same circumstances. While the circumstances can vary, this comparison is

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<sup>73</sup> School of Advanced Military Studies, *Art of Design: Student Text*, version 2.0 (Fort Leavenworth Kansas: School of Advanced Military Studies, 2010), 10.

<sup>74</sup> U.S. Department of the Army, *Field Manual 5-0, The Operations Process* (Washington D.C., March 2010) Foreword.

<sup>75</sup> United States Army G3/5/7, 7.

<sup>76</sup> Neustadt and May, 11.

<sup>77</sup> *Ibid.*, 31.

likely still too narrow to explain the uniqueness and often greater complexity of ground situations. Whereas the medical professional makes decisions based on the complexities of the single individual within his or her environment, the commander makes decisions based on the aggregate of *all* individuals and events involved in a situation. This concept is still useful, however, if the system of the ground commander is correctly framed relative to the mission.

History also provides innumerable examples of decisions made that would likely have been different in another time and place. Similar to the medical practice, however, multiple historical perspectives might provide a basis for contextual observations and framework from which to work. In this way, aspects of what may appear to have been a simple decision can be evaluated or possibly qualified for what should be reasonable and prudent. It is important to note the range of possible variance in a situation to have some sense of the usual. This is important because, at a minimum one should be able “to know that what we call usual is at least not exceptional.”<sup>78</sup> Examples of historical analysis have used various methods to qualify their analysis, noting where comparisons break down. Commanders already do this to some extent in an intuitive manner at a local level for Army Officer Evaluation Reports. However, comparisons have a tendency to break down outside of a single rater as the context that the commander used is no longer relevant in the greater aggregation.

Another issue is that the collection methods designed to facilitate learning and feedback have a tendency to be focused on a less than holistic view. Thus they may be only useful on a smaller scale. After Action Reviews and reports submitted to the Center for Army Lessons Learned should be collected in a manner that not only identifies useful tactics techniques and procedures, but also facilitates identification of why outcomes occurred and ties in to post education in a more direct manner. Finley hints at this concept stating: “What capabilities do they bring to the organization that not only make our team stronger, but have a direct effect on the quality and speed of our own decisions? How well does one know themselves, and is what they know relevant to what they want to achieve? That is the point of this

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<sup>78</sup> Ibid., 33.



effort: operational leaders can accelerate their decision making cycle when they develop, empower and support adaptive leadership in their subordinates.”<sup>79</sup> This concept should be taken to the next level by structuring the recording of the story to facilitate tracing elements back to the training/learning event(s).

Cost-benefit estimates are far from simple. At first glance, determining the effectiveness of training should as easy as determining the return on investment for any other endeavor. Simply take the program costs and dividing them by the net program benefits. This is easier to say than to do, however. Here again, determining what to measure and how on the side of the program outputs is a limiting factor. To start, there is the issue of determining the levels of performance. Levels of performance, as a sub-element of effectiveness, may include minimum performance standards identifying what is good enough and why, as well as any differences that are significant in other contexts. Also measuring the quantitative performance of a commander in the field can actually be limiting to the understanding of the overall picture. For example, the number of men commanded, the number of operations led, the worth of the equipment responsible for, and even the number of injuries and fatalities can paint a very biased picture that is virtually worthless out of the overall context. The number of insurgents picked up as a simple measure, for instance, may prove to be misleading. With this measure, if an effort is successful, the number of insurgents may diminish. Or the number may rise instead if the enemy perceives the need to send in more reinforcements. As a result the quality (effectiveness) of the insurgents remaining may be either higher or lower. If the more effective insurgents are truly those remaining, they may be better at eluding capture. Contrarily they may also be less active, less effective, or even new to the area if they are sent in to replace or reinforce. This example is just one illustration of the need to incorporate context into the development of many of these measurements. Once the understanding that was in place prior to an operation or campaign is properly recorded and compared to the understanding at the end, aspects may be

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<sup>79</sup> Daniel A. Finley, *The Need for Speed: Accelerating Decision Making on the 7 C's of Adaptive Leadership* (Newport, RI: Naval War College, 2008), 2.

identified that informed both understandings that may be tied in more specifically to components of previous learning events to see how and why the previous events influenced thinking.

Nothing comes without a cost in either contributed resources or outcome. One aspect that is easy to either overlook is the scope of measures relative to organizations. Costly hidden outcomes such as sub optimization may occur as a result.<sup>80</sup> What may be good for increasing the effectiveness of one aspect of training, education, or experience, may be detrimental or limiting to a larger aspect of the soldier and/or organizations. An extra four weeks at a school that improves the quality of retention and application of knowledge may have a negative impact on the student soldier's performance in the subsequent assignment due to lost time or opportunity cost, additional emotional or physical exhaustion, and a subsequent negative impact on the soldier's family. If the change in education results in, hypothetically, a twenty percent increase in effectiveness, but a five percent decrease in retention, this could result in an overall negative benefit, since a replacement will now have to be trained and will usually have less experience than the new soldier. The length of training and education elements by themselves have a usually smaller, but similar effect, by reducing the ratio of utilization to education time within the framework of a typical career. The associated costs of manpower, in addition to direct dollars spent, is also underreported and/or underestimated. This goes to the thought of what is the cost of a certain level of effectiveness relative to the other operations within the Army. Frank Camm notes: "Effective alignment of institutional and operational portions of the Army 'appropriately balances' the priorities of the resource stewards that allocate dollar and personnel authorizations with the priorities of operational and non-operational users of outputs from institutional activities."<sup>81</sup>

Lastly regarding cost, the concept of over-processing is when resources are expended in a process that does not add value to the end product. Some of these resources, such as school quotas and

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<sup>80</sup> Sub optimization is fulfilling an objective at one level of an organization that is different than that of the larger organization.

<sup>81</sup> Frank Camm, Cynthia R. Cook, Ralph Masi, and Annie Wong, *What the Army Needs to Know to Align its Operational and Institutional Activities* (Santa Monica, CA: The Rand Institute, 2007), xx.

allotments, may have wide-reaching second and third order effects on the rest of the force. Examples of this issue have been identified before within the NCO corps: “Based on Army personnel data, soldiers were sent to NCOES courses at two to three times the rate soldiers in the grade were being promoted.”<sup>82</sup> This has happened before due to changes in NCOES management and training backlogs with lasting effects on individuals and organizations in the form of opportunity costs.

Once you have a good concept of how to select your measurements, there is the process of designing the learning event with the appropriate content and recorded with appropriate data capture in mind. In the U.S. Air Force’s Analysis of Alternatives Orientation Course, for example, the evaluation framework for courses of action is comprised of a series of phases with additional steps that lead the generation of a brief. The phases include resourcing, planning, analyses, and reporting. In the resourcing phase, purpose, background, and scope are considered along with organization and management. Then in the planning phase, the three steps of acquisition issues, alternatives, and effective measures determination are performed. The third phase, analysis, contains the steps effectiveness analysis, risk assessment, affordability assessment, and cost analyses. Finally, the fourth phase of reporting considers alternative comparisons and the generation of the Analysis of Alternatives Report.<sup>83</sup> While this type of course requires far more data capture than either a go/no-go event or a course with multiple choice tests, it likely supports greater context for re-aggregation of data later, supporting a wider variety of post-collection analysis. This is necessary for later analysis and especially important to compare with future iterations where the coursework has likely been modified.

One often overlooked aspect of education is considering the biological aspects of memory creation and recall. Jeffrey S. Johnson illustrates this concept: “Imagine, for example, that you are sitting at your desk drinking a cup of morning coffee. At some point, you set the coffee cup down and turn away to retrieve a

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<sup>82</sup> John D. Winkler, John F. Schank, Michael G. Mattock, Rodger A. Madison, L. Diane Green, James C. Crowley, Laurie L. McDonald, Paul S. Steinberg, *Training Requirements and Training Delivery in the Total Army School System* (Santa Monica, CA: Arroyo Center, Rand Corporation, 1999), 12.

<sup>83</sup> U.S. Special Operations Command, *Measuring Training ROI: Silver Bullet or Urban Legend* (New London, CT: Brief for the Military Operations Research Society Symposium (76<sup>th</sup>), June 10-12, 2008), 7-8.

paper from your briefcase. When you turn back towards the desk and reach for the coffee mug, you notice that the cup is different from the cup you were drinking from previously (e.g. its color has changed). What's the cause of this change? Looking around, you realize that a colleague sitting at a nearby desk has picked up your coffee mug, mistakenly identifying it as her own. To detect simple changes such as this, the properties of the first cup must have been held for a brief period of time in memory and subsequently compared to the second cup.”<sup>84</sup> While pattern recognition seems rather simple and obvious in a sense, it may be applicable to determine how a teaching technique is actually changing the brain function of the student and why; for it is the reconciliation of difference that forms understanding. Measures of health over a career are being looked at in programs such as the Army Physical Fitness Research Institute. Studies of stress and sleep have been done to determine their effects on training and learning. While studies of the brain in negative cases such as exposure to improvised explosive devices are being looked at on a regular basis, little is being done to study the brain in cases of success. A little background may be necessary at this point to explain the potential. Expanded understanding of transfer of neural synchrony in virtual working memory to long term memory may prove useful as an observed correlative measurement of learning over time. For example, assemblies of neurons in the inferotemporal cortex are linked to matching assemblies within the prefrontal cortex.<sup>85</sup> The inferotemporal cortex will hold through coding the attributes of a particular item, such as the color of the coffee cup in the example. The assemblies themselves represent the objects themselves, i.e. the coffee cup. When the system of the inferotemporal and prefrontal cortexes is stimulated, the sustained oscillations that occur cause groupings of neurons coded for different features to fire out of phase. This allows multiple feature values (attribute differences) to be temporarily retained. Subsequent synchronization links the features and binds the

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<sup>84</sup> Jeffrey S. Johnson, *A Dynamic Neural Field Model of Visual Working Memory and Change Detection* (Iowa City, IA: University of Iowa, 2008), 1.

<sup>85</sup> Inferior Temporal (IT) Cortex is the cerebral cortex on the inferior convexity of the temporal lobe in primates including humans. It is crucial for visual object recognition and is considered to be the final stage in the ventral cortical visual system. It corresponds to cytoarchitecture Areas 20 and 21 (in Brodmann's terminology) and Area TE (in von Economo's). In humans it consists of the middle and inferior temporal gyri.

results into objects. Chunking from inhibition in the assemblies allows for greater use in working memory.<sup>86</sup> The next step is to see how the sequence of material is consolidated and transferred to long term memory. While differences of long term memory formation and retention such as neural path efficiency are just making gains, capture of brain activity data using an appropriate sample of the student population before, during, and after education and training experiences can provide expanded understanding of program efficacy and may be useful over the long term if pattern correlation can be detected before or after significant events such as planning and after action reporting.

Adding additional breadth designed to take in information from different perspectives allows leaders at all levels greater understanding and thus more freedom of action. A person must constantly take in information and evaluate it to determine relevancy and accuracy. This is a mere expansion of the freedom of action described by B.H. Liddell Hart and other strategic theorists.<sup>87</sup> The idea is to have more options available than the enemy. In regard to thought process, this means that a leader needs to have as broad an understanding of the overall environment as possible. Other educational realms provide another avenue to add quality and breadth to conceptual processes. In this way it is like the reception of a device in a wireless network. The quality of what is received is based on a *minimum* of two dimensions. These are the rate and probability of error. The maximum rate achievable with a minimum of error can often be achieved by looking at the limitations of physical channels analogous to the number of antennas and the frequency band in the case of the network (factors of the maximum data signaling rate). In the case of the leader additional modes and perspectives of receiving information provide a better depth of understanding and ways to approach problems. Limited input mechanisms may also misrepresent situations. Fusing the two aspects into a single parameter for consideration, such as the signal to noise ratio, may be desirable. However, in multi-channel environments that Special Forces officers find themselves in, the signal to

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<sup>86</sup> Johnson, 15.

<sup>87</sup> B.H. Liddell Hart, *Strategy* (New York: Signet, 1954), 328.

noise ratio is insufficient to determine the capacity and minimum probability of error gains.<sup>88</sup> Likewise gaining additional ‘channels’ to receive and evaluate input will provide leaders additional capacity in a similar fashion. Thus broad education can be significant in adding degrees of freedom to the cognitive ability of the leader (in multiple senses of the term). The ability to challenge perceived limitations in this aspect of leader cognition is a key element in determining the overall effectiveness of career management. This idea of broadening the way leaders take in information is most obvious in in foreign language training. As an example, foreign language has long been identified as a means of gaining situational understanding and improving trust when working with others. Learning a foreign language is significant in education in that it requires a significantly different set of thought patterns. Music and math also have similar levels of difference in thought. The amount of time and resources spent on Special Forces officers for language and cultural exposure could be increased. Incorporating an officer exchange program at a wider level has been suggested before. This would be a career requirement for the officer to spend six months to one year with a foreign army utilizing their target language.<sup>89</sup> This would tend to make the Special Forces officer corps some of the better linguists, facilitating better understanding that would serve the force for the rest of their careers. In addition, continuing reunion exchanges every couple of years could be facilitated for continuity and language/cultural update. Besides lower level measures such as language proficiency, effects can be inferred by the number of officers with these tours in a particular country and region. As a result, these officers could be key contributors to SOF Theater Security Cooperation Plans.

What students learn depends on the quality of instruction.<sup>90</sup> It is unrealistic to develop breadth in education with commensurate measures of effectiveness without a highly experienced, broadly educated,

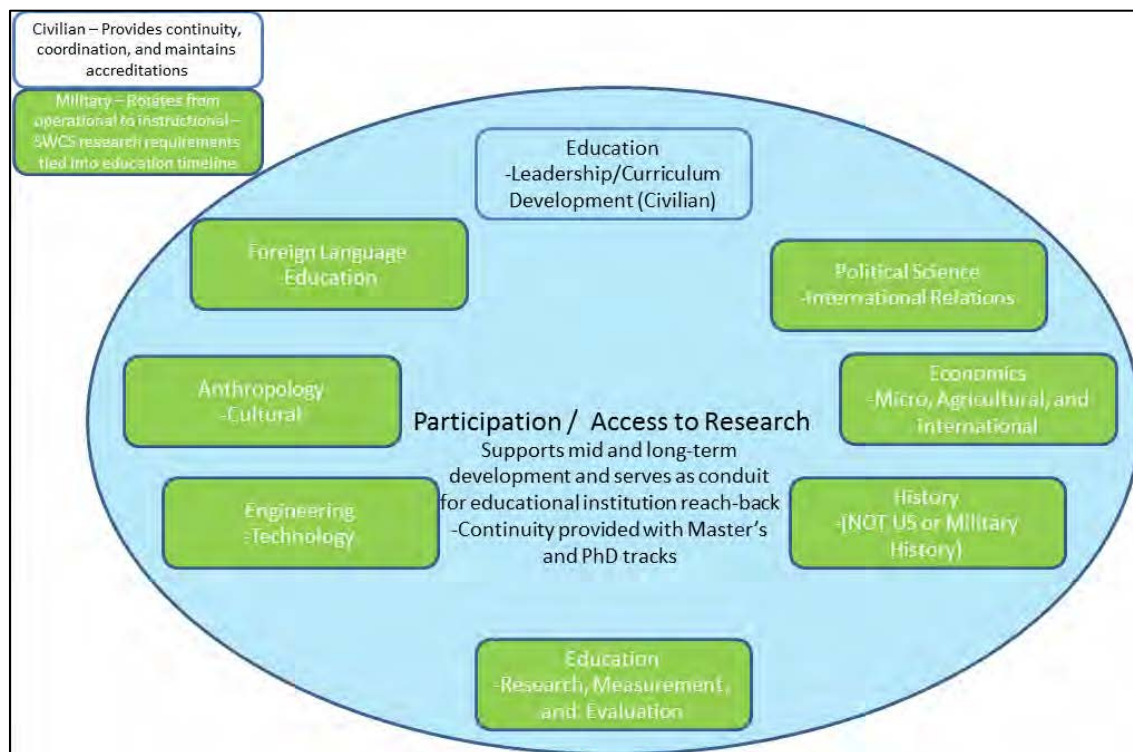
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<sup>88</sup> Mahesh Godavarti and Alfred O. Hero III, “Diversity and Degrees of Freedom in Wireless Communications,” *IEEE International conference on Acoustics Speech and Signal Processing*, v. 3 (IEEE, 1999), 2861-2864.

<sup>89</sup> Patrick J. Donohoe, “Preparing Leaders for Nationbuilding,” *Military Review* (May-June 2004), 26.

<sup>90</sup> Statement from BG Bennet S. Sacolick during a briefing given to Special Operations Intermediate Level Education and School of Advanced Military Studies students (Fort Leavenworth, KS: October 5<sup>th</sup>, 2010).

and purposefully multi-disciplined staff. The Special Warfare Center and School would then be better suited to provide the coordination and integration of educational efforts throughout the career of Special Forces officers. At the time of this writing, some efforts to facilitate Army Special Operations soldiers attaining targeted masters and PhD level degrees have received some consideration. In figure 4, a small number of civilian PhDs would be the overall continuity for the rest of the educational staff and would provide continuity, coordination, and maintains accreditations. Although the military PhDs and master's program professors would still rotate between operational and instructional positions, research requirements could be more specifically integrated into operational tours where possible.



**Figure 4 – Author's Sample PhD Distribution**

Looking at typical officer timelines should be readdressed. One of the largest impediments is the fact that personnel management systems are structured around the twenty year military timeline. Opportunities to progress in education and training are often limited (or forced) by the soldier's relative position within their career. These limitations may be at the detriment to the organization and the individual and cause the individual to seek opportunities elsewhere. Nelson notes: "When significant

opportunities present themselves outside of the service, the service member will act rationally in leaving the service soon after reaching the twenty year mark knowing that he/she has the opportunity for only a few more years of service anyway.”<sup>91</sup> In this way, the Special Operations community may be a victim of its own success. Individuals seeking greater challenges and opportunities are what brought these soldiers to the community in the first place. It is presumptuous to think that a Special Operations soldier who has always sought additional opportunities for success and personal development will suddenly become content. Continuing to provide opportunities that are mutually beneficial to the individual and the community will reduce much of the friction that causes the most successful to look elsewhere and retains only those individuals without options. Mutually beneficial ideas have been looked at before to address other problems. Gerlach looked at the idea of officer sabbaticals to alleviate the stresses of frequent deployments while providing benefit to the military: “Implementing a comprehensive officer sabbatical program would address and could help alleviate many of the factors that inhibit the military’s ability to retain its best officers and enrich their capabilities.”<sup>92</sup>

Considering Measures of effectiveness in the design of learning events will assist in meeting future educational requirements. Special Forces officers will require an even broader educational base over a longer career to meet these future requirements. Logically, those educating these officers will need an even greater educational base, not only to be effective, but recognize long-term systemic problems and hopefully presented opportunities that need to be measured and implemented over the period of a career. Nesting educational content, context, methodology, and sequence over a broader and longer time period would allow Special Forces officers to operate at higher levels on the true battlefield of the future, the mind.

Educational developments starting in the 1980s started to address the need to measure the effectiveness of public educational venues but were met with various levels of frustration due to largely

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<sup>91</sup> Andre’ Nelson, “Impacts of the 20 Year Retirement System on Special Forces” (Lawrence Kansas: monograph, University of Kansas, 2010), 15.

<sup>92</sup> Gerlach, 25.



post-design process measurement and scale limitations. Managers at all levels have had incentive to pay too much attention to a limited set of measures resulting in some level of counter productivity. Barriers and limitations in educational venues are one of the largest impediments to organizational success. Brigadier General Sacolick in a 2010 briefing to SOF ILE and School of Advanced Military Studies students stated: “I don’t need to motivate Special Operations soldiers; I just need to make sure I don’t demotivate them.”<sup>93</sup> More emphasis should be made on measuring and evaluating the systematic barriers that impede progress and not just searching for ways to apply more stimulus to individuals and organizations.

Lastly, while the enemy may spend all of an adult life with on the attainment of success, the structural limitations imposed by the twenty year military retirement system is an artificiality that gives many enemies a distinct advantage that must be overcome by a greater quality of understanding. This understanding must come from a holistic approach that includes greater educational breadth and possibly a longer career horizon. Providing this broader education within the Special Forces community while striving to incorporate longer-term measures that span a career may provide the additional insight to meet future challenges.

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<sup>93</sup> Sacolick.

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